UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,779	03/29/2004	Woo-Seog Park	2060-3-60	5006

35884 7590 04/21/2010

LEE, HONG, DEGERMAN, KANG & WAIMEY
660 S. FIGUEROA STREET
Suite 2300
LOS ANGELES, CA 90017

EXAMINER	
DAGLAWI, AMAR A	

ART UNIT	PAPER NUMBER
2618	

NOTIFICATION DATE	DELIVERY MODE
04/21/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

uspto@lhlaw.com
ip.lhlaw@gmail.com
ip.lhlaw@live.com

Office Action Summary	Application No.	Applicant(s)	
	10/812,779	PARK, WOO-SEOG	
	Examiner	Art Unit	
	AMAR DAGLAWI	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 September 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *35-40 and 43-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *35-40 and 43-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☒ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Claims 35-40 and 43-46 are pending. Claims 42 and 42 are cancelled without prejudice. The amendment has been entered.

Response to Arguments

1. Applicant's arguments filed on 09/02/2009 have been fully considered but they are not persuasive.

Applicant argues with respect to claims 35-46 that applicant's admitted prior art fails to teach an audio amplifier that amplifies ring tone or signals that produce a vibration and further applicant's admitted prior art in view of Saiki (US 6,259,935 B1) fails to teach in the first state amplifying audio signals in a processor of the mobile communication system and in the second state amplifying ring tone signals in an amplifier external to the audio processor and in the third state amplifying a signal in the amplifier external to the audio processor. However, the Examiner respectfully disagrees and applies the broadest reasonable interpretation to claims without incorporating limitations from the specification into the claims according to MPEP 2111. Thus, applicant's admitted prior art teaches in Fig.2 and par [0012-0017] a structure of a mobile communication terminal adopting the MFD. The conventional mobile communication terminal adopting the MFD which includes an audio processor provided in a processing unit and an audio amplifier for amplifying an analog audio signal outputted from the audio processor and an MFD or performing voice, ring, and vibration functions according to an output signal from the audio amplifier. Also, Saiki

further teaches With reference to FIG. 7, the structure of the electro-mechanical-acoustic transducing device A3 according to Example 3 of the present invention will be described. FIG. 7 is a block diagram showing the structure of the electro-mechanical-acoustic transducing device A3 according to Example 3 along with an antenna 37, a received signal processing unit 36, and a receiver 38. In FIG. 7, the same components as those described above are denoted by the same reference numerals, and the description thereof will be herein omitted. The electro-mechanical-acoustic transducing device A3 according to Example 3 includes a low-pass filter (LPF) 19 and a high-pass filter (HPF) 20 between a frequency detector 13 and an amplifier 11 in a feedback loop. A switch SW2 determines which one of the low-pass filter (LPF) 19 and the high-pass filter (14PF) 20 is selected, based on a signal 14 generated by the signal processing unit 36 in accordance with the setting of a selection switch operated by a user. The electro-mechanical-acoustic transducer 12 has at least two mechanical natural resonance frequencies as described above. When an electric signal with a frequency corresponding to the lower one of the natural resonance frequencies, (FIG. 4) is applied, vibration is generally generated. On the other hand, when an electric signal with a frequency corresponding to the higher one of the natural resonance frequencies, i.e., f02 (FIG. 4) is applied, sound is generally generated. Therefore, at the time of generating vibration, the switch SW2 is set to a terminal X by the selection signal 14 which corresponds to the state of the aforementioned selection switch so as to select the low-pass filter 19. As a result, a high frequency component (i.e., the frequency f02) in the signal which is feed backed from the frequency detector 13 to the amplifier 11 is

cut, so that only the low frequency component (i.e., the frequency f01) is feedbacked. On the other hand, at the time of generating sound, the switch SW2 is set to a terminal Y by the selection signal 14 so as to select the high-pass filter 20. As a result, a low frequency component (i.e., the frequency f01) in the signal which is feedbacked from the frequency detector 13 to the amplifier 11 is cut, so that only the high frequency component (i.e., the frequency f02) is feedbacked. Accordingly, in the case where either vibration or sound is generated upon the arrival of the signal, the switch SW2 is generally connected either the terminal X or Y as described above. Alternatively, the signal C may be supplied to the switch SW1 as a repetitive pulse with a predetermined period, thereby successively turning the switch SW1 ON and OFF. Consequently, intermittent vibration and sound may be generated in an alternate manner. On the other hand, if the switch SW2 is alternately switched between the terminal X and the terminal Y while the switch SW1 is kept in an ON state, vibration and sound can be alternately generated in a time-divisional manner. In order to realize the operation as described above, characteristics of each of the filters 19 and 20 are set so that a frequency corresponding to the higher natural resonance frequency f02 of the electro-mechanical-acoustic transducer 12 is present in a rejection band of the low-pass filter 19, and a frequency corresponding to the lower natural resonance frequency f01 of the electro-mechanical-acoustic transducer 12 is present in a rejection band of the high-pass filter 20. Alternatively, it is possible to simultaneously generate vibration and sound by setting either the low-pass filter 19 or the high-pass filter 20 only to allow both

signals having frequencies respectfully corresponding to the tow natural resonances frequencies to pass therethrough.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 35-40, 43-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted background art in view of Saiki et al (US 6,259,935 B1).

With respect to claim 35, Applicant's admitted background art teaches A method of controlling quality of output produced by a multifunction device (MFD) capable of producing both sound and vibration in response to receiving electronic signals, wherein the MFD is embedded in a mobile communication system, the method comprising:

Determining whether the mobile communication system is in a first, second or third state (Fig.2, par [0012-0017]); [The processor unit determines the state either voice, ring or vibration].

in the first state using a first path for , amplifying voice signals produced by an audio of the mobile communication system without modulating the amplified voice signals (Fig.2, par [0012-0017]) **but fails to teach removing low frequency resonance components in the amplified audio signals that fall below a first threshold, and providing the amplified, filtered audio signals to the MFD;**

in the second state using the first path, amplifying ring tone signals generated in an amplifier external to the audio processor (Fig.2, par [0012-0017]) **but fails to teach removing low frequency resonance components in the amplified ring tone signals that fall below a first threshold, and providing the amplified, filtered ring tone signals to the MFD;** and

in the third state using a second path that is at least partially distinct from the first path for , amplifying a signal the amplifier external to the audio processor and providing the amplified, non-filtered signal to the MFD to produce a vibration (Fig.2, par [0012-0017]).

In analogous art Saiki teaches filtering the amplified audio signals using high pass filter. The high pass filter removes low frequency resonance components (please see Fig.7, col.11, lines 15-67, col.12, lines 1-51).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of the mobile terminal adopting the MFD to

incorporate a high pass filter so as to cut the low frequency components and achieve an improved quality of the voice or ring.

With respect to claim 36, applicant's admitted background art in view of Saiki further teaches the first, second, third states are set by a user of the mobile communication system (background art, Fig.2, par [0012-0017]) [the processor unit sets the state either voice, ring or vibration].

With respect to claim 37, applicant's admitted background art in view of Saiki further teaches the MFD produces an audio voice in the state (background art, Fig.2, par [0012-0013]).

With respect to claim 38, applicant's admitted background art further teaches the MFD produces a ring tone in the second state (background art, Fig.2, par [0012-0016]).

With respect to claim 39, applicant's admitted background further teaches a user sets the MFD to produce a vibration in the third state (background art, Fig.2, par [0016]).

With respect to claim 40, applicant's admitted background art teaches A apparatus for controlling quality of output produced by a multifunction device (MFD) capable of producing both sound and vibration in response to receiving electronic signals, wherein the MFD is embedded in a mobile communication system, the apparatus comprising:

An audio processor responsive for determining whether the mobile communication system is in a first, second or third state and amplifying audio signals in the first state

and an amplifier external to the audio processor for amplifying audio signals in the second an third state (Fig.2, par [0012-0017]); [The processor unit determines the state either voice, ring or vibration].

However, applicant's admitted background art fails to teach a filter for removing low frequency resonance components in an amplified audio signals that fail below a first threshold in the first and second state and a switch for providing amplified, filtered audio signals to the MFD in the first state wherein the amplification and the filtering of the voice signals is achieved as the voice signals travel through a first path, amplified, filtered ring tone signals to the MFD in the second state wherein the amplification and the filtering of the voice signals is achieved as the voice signals travel through a first path , and an amplified, non-filtered signal to the MFD to produce a vibration in the third state wherein the amplification of the vibrations signals is achieved as the vibration signals travel through a second path that is at least partially distinct from the first path is further taught in analogous art by Saiki (See Fig.7, col.11, lines 15-67, col.12, lines 1-51).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of the mobile terminal adopting the MFD to incorporate a high pass filter so as to cut the low frequency components and achieve an improved quality of the voice or ring.

With respect to claim 43, applicant's admitted background art in view of Saiki further teaches the first, second, third states are set by a user of the mobile

communication system (background art, Fig.2, par [0012-0017]) [the processor unit sets the state either voice, ring or vibration].

With respect to claim 44, applicant's admitted background art in view of Saiki further teaches the MFD produces an audio voice in the first state (background art, Fig.2, par [0012-0013]).

With respect to claim 45, applicant's admitted background art further teaches the MFD produces a ring tone in the second state (background art, Fig.2, par [0012-0016]).

With respect to claim 46, applicant's admitted background further teaches a user sets the MFD to produce a vibration in the third state (background art, Fig.2, par [0016]).

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMAR DAGLAWI whose telephone number is (571)270-1221. The examiner can normally be reached on Monday- Friday (7:30 AM- 5:00 AM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NGUYEN DUC can be reached on 571-272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Amar Daglawi
Examiner
Art Unit 2618

/Amar Daglawi/
Examiner, Art Unit 2618

/Duc Nguyen/

Supervisory Patent Examiner, Art Unit 2618